DOCUMENT RESUME

ED 265 614 EA 018 083

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TITLE Critical Thinking and Education Reform.
PUB DATE 20 Jul 85
NOTE 59p.; Address delivered at a workshop at Sonoma State University on "Critical Thinking and Education Reform" (Sonoma, CA, July 20, 1985).
PUB TYPE Speeches/Conference Papers (150) -- Viewpoints (120)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Change Strategies; Competence; Creativity; *Critical Thinking; Curriculum; *Educational Change; Educational Improvement; *Educational Objectives; Elementary Secondary Education; Imagination; Intellectual Development; Teacher Qualifications; Teacher Recruitment; Teaching Conditions

ABSTRACT

The development of critical thinking skills in students is seen in this presentation as a significant and worthy objective of education, though the realization of this objective will be dependent upon many important factors. Among the factors cited here are, first, that recent major reform efforts have created no barriers to including critical thinking among educational objectives, but that attempts to realize these reforms through rules, regulations, and standards may be creating conditions that are detrimental to critical thinking. Second, many of today's teachers are not competent to teach in their subject areas, let alone to approach those subjects critically; moreover, economic and other conditions make it unlikely that great numbers of competent teachers will soon be entering the profession. Third, it is essential that critical thinking not become an end in itself; rather, it must be learned in the context of subject matter. Fourth, creative imagination should be considered a worthy educational goal along with critical thinking, since the two interact to produce insight and discovery. This transcript of a talk on these matters includes answers to several specific questions raised by listeners in response to comments in the main body of the address. (PGD)

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ADDRESS BY ALBERT SHANKER

PRESIDENT OF THE AMERICAN

FEDERATION OF TEACHERS

CRITICAL THINKING AND

EDUCATION REFORM

July 20,1985-Sanoma State University

MR. SHANKER: Thank you very much. If I had known this was the setting, I would have brought my gym suit.

I would like to say at the outset that I am partly an outsider here and partly an insider. I am an outsider because I have not spent, as many as you have, many months or years or conferences thinking about, reading about how to bring the schools to the point where critical thinking becomes not only a major objective, but where that objective is incorporated into the life of the school and into the fabric of teacher education. So, I am an outsider from that point of view. This is not the circuit that I usually travel.

However, I am an insider in that, to some extent, the critical thinking movement represents a marriage between elementary and secondary education on the one hand,

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and philosophy on the other, and it happens that my work in both my undergraduate and graduate days was in the field of philosophy. It is just a coincidence that I ran out of money and I couldn't write a page of my dissertation without realizing that there were still four or five books that needed to be read before I could begin. So, after running out of both money and patience, I decided I would teach for one year to get away from it all and I found a different life and a different career. But my interest in philosophy has continued and I think this is an important correlation.

I would like to make a number of points this morning. First, I would like to deal with the issue of the school reform movement. We are all aware of the fact that over the last two years and four months there have been about thirty reports on the national scene. Many of these reports are critical of what public elementary and secondary school education is doing. But in spite of the fact that these reports are critical, these are not the type of critics who are coming to destroy us. The interesting thing to observe about these reports is that out of thirty national reports with political figures and businessmen, not a single one

supports the idea of tuition tax credits or vouchers. Not a single report says abandon the public schools and send the students elsewhere and I guarantee to you that every single one of these communities debated the issue. So, one of the unsaid conclusions of these reports is that public education should continue to be the major delivery system in this country and that the business and political community are not ready to abandon it, but rather wish to improve it.

The second important thing that we can see in the reform movement is that it came at a very important time. It came at a time when the percentage of people in our population who are parents of children in school is very small. We went from the baby boom period where about 55 to 60 percent of the voters in this society had children in school, and therefore being for education was something that every politician had to do. He was just catering to the majority of voters to a point where we are now, about 22 percent of the voting population have children in public schools.

We went from the time when the general public thought that the schools deserved A or B when they gave the schools a report card, to the point where we are down

to C and D.

We went from a point where we had a prospering economy and everybody was making more money every year and as they made more money they said sure we will pay a little more taxes for schools, to a point where we had a stagnant economy and where people are saying no, I am not going to tighten my belt any further to pay for schools or other public services. And we finally came to a point a few years ago where a majority of American people on poll said they were ready to abandon public education and to support aid to students who go to nonpublic schools and, finally, we have now a 5 to 4 Supreme Court majority in favor of tuition tax credits and the appointments that are likely to be made by the President in the next few years will move that even further in, what I would consider to be and I hope you do, the wrong direction. So, we are in a lot of trouble.

One of my major worries when I saw all of these reports is here were businessmen, here was the head of IBM, here was the head of Union Carbide, here were the heads of Procter & Gamble and many other corporations and I was very concerned. What do they want from public schools? What do they want teachers to do? What do they want children

to learn?

I think if I were to give a quiz right now to everybody here, I think that you would probably have the same questions and doubts and suspicions that I had at the time and that you would say what do business people want? They want people who will go to work for their companies and they will have the skills that they need. In a sense, they want a kind of vocational education. They don't want people who will be creative or critical except to the point where they need those people within their company.

I want to tell you that I was very pleasantly surprised. Surprised is perhaps too soft a word--shocked. Maybe if I had talked to small business people in little communites and they needed a bookkeeper or this or that, I would have found the kind of sterotypical businessman that I imagined when I met these people. But I have now spent over two years in very long and extensive meetings and there is no doubt in my mind that what these people said to me privately, they have said publicly and they have said in reports that they have come to realize that education is not narrow and not necessarily vocational and that education essentially isn't education until it leads to critical thinking and the use of, creative use of imagination,

and they came about it in a rather interesting way. You can see the evolution--1979 front page stories the reason America is falling behind is because we haven't rebuilt our factories. We were not lucky to be bombed out during World War II. All the countries we bombed out are ahead of us because we went and built new plants for them while we had the old plants, and now we can't compete.

So, what do we need? Reindustrialization, rebuild our factories. Then came two years later and somebody discovered that is not enough. Even if we rebuild our factories, look at what is happening. Half of the bridges are falling, sewage, water supply, our harbors won't take the ships we need. We are the only industrialized country that has no railroad system to speak of. Rebuilding infrastructure. That became the next thing, billions and billions of dollars. Then the businessmen said you know what, even if we rebuild the factories and we rebuild the infrastructure, we don't have anything until we rebuild the human infrastructure. The basic international competition today is not on the narrow, old-fashioned type of factory productivity. It is a question of who is going to develop the best chip. We are living in a world in which advanced

technology and information of the issues and these emerge from the knowledge industry and if you train people narrowly, you are not going to get the edge.

I was at a meeting with a whole bunch of bankers. It was a meeting of the American Branch of the Trilateral Commission and there were bankers and there were politicians there and there were former ambassadors and secretaries of state. Henry Kissinger was present and others. There was a discussion about how Europe, the mass of unemployment that has taken place, and how inferior the Europeans feel, look where the Japanese are.

Then, they look at the United States and every country in Europe is just like one state in the United States. So, they have no diversification and they say you Americans can't lose. If Michigan goes down, Texas will go up. If Texas goes down, California will go up, but if France goes down, France goes down. There isn't the great diversification that you have in a country like ours.

Then, one of the bankers stood up and said yes, but ultimately Europe will come out ahead of America because just compare the educational products. The banker introduced the question that ultimately the Europeans will come out ahead of the United States in spite of all of our

advantages and he didn't talk about banking or national resources or anything. He talked about education and education in the broad sense. This is something that we can all be thankful for, that at a time when the troops that we had in the form of teachers and parents and school board members and others that we have coming to help us, some leading figures in the business community who are not concerned with a narrow vocationalism, but who have a very deep understanding that unless our education moves beyond the more narrow and the vocational and to the issues that we are involved in here which are imagination and critical thinking and creativity, that we will suffer some very substantial and some major losses. That is the context.

Where has this led us? Unfortunately, the implementation of reform has become a kind of very burdensome state regulation. Here in California we have the Business Roundtable leading the charge for a $2.0 billion increase in education over two years--very important, very good, but the result in a 150-page piece of legislation which says children will learn X number of minutes of this, X minutes of that and this is the length of this and this is the exam and this is the promotion policy and this is this.

So, at the very moment that we have Peter's books on the Passion for Excellence and how it is very important to get people to buy in and to participate and to have each worker make decisions and how creativity is developed by unleashing the forces that are there on the part of the students and teachers and principals at the local level, it is the very same time that the best seller lists are producing millionaires on the basis of their philosophy that you have got to have creativity at the local level, at exactly the same time, and we are sending quite a message to anybody who is thinking of coming into teaching: They are going to look at all the legislation and say nobody tells doctors to cut a little to the left or a little to the right. Nobody has massed 150 pages for any other group of professionals. They must think we are a bunch of idiots because unless they tell us what to do every minute of the time we are not going to do it right.

We are essentially sending a message to talented, creative people that this is not the place for them because this is a place where they will not be trusted. The result is because the schools did become too soft and we didn't put appropriate pressure on students, we didn't

say that Shakespeare and Dickens are better than comic books and television. We didn't say you have to learn math and science. We got this set of regulations in various states and, with them, examinations which are going to prove to be very disappointing. The scores are already going up all across the country. Reading scores in New York are up and in Chicago and in Washington, D.C. I really would like to believe that children have all of a sudden turned around and within the last two years have read the Nation at Risk and every student at school has decided: I am going to improve my score. If you believe it, then you believe in the tooth fairy.

I don't believe it. I think kids are getting higher tests scores because teachers feel pressured and pressed and so do administrators, and so we are giving kids multiple choice exams every week and we are giving them strategies on how to do it and they are getting a little more comfortable and when the final point comes they won't really be able to read a book or really be more literate or be more critical or intelligent or more understanding of science than they ever were before, and the public will ultimately be bitter or angry because there is more money invested and there are more promises out there.

We keep telling them that the thermometer or barometer or the indicators are moving up and what is moving up is kind of artificial. It doesn't represent anything that is going to mean anything in the long run. You can't fool the people and I don't want to fool them anyway, but they will not be fooled. Over a period of time they will see that the movement of scores is very artificial and it means very little.

Furthermore, the movement of these scores really puts tremendous pressure on most people in the educational community to remove from the curriculum that which is most important and most meaningful. That is, if you have a whole bunch of tests that don't require any thinking or any creation or any comprehension, they require a lot of memorization, as you will see when I get to some other points in a few minutes, it is a necessary part of learning, but this wave of reform--well, we have always known that all problems are caused by solutions. Here we have a solution and it will certainly cause problems.

Now, I would like to say that the only way in which we will really satisfy the business community and the political community and the general public is if we say to these reformers: Thank you for coming along, thank you

for coming along and giving us a real swift boot. We really needed it. We should have done it ourselves. We should not have waited for you, but we did get kind of soft. We got carried away by the previous wave of reform in the 1960's and in those days the big thinkers told us that we were the imperalists compelling these poor colonial children to conform to an adult set-up of middle-class standards and that they really had to choose their own way and that we are immoral if we impose anything upon them. So, we listened to you and we got out of the way and it was a mistake. Now we are blamed for it.

Now that you have shaped us up, now that you have these rules and regulations, we have to find a way to get beyond them and getting out of them because they will present us from finding the true job of education.

We have got to go to Bill Honig and say suppose a district or school comes up with a better proposal for educating children and your rules and regulations won't allow us to do these better things, is there a way for us to get out from under them, not to lower standards, but actually raise standards because to teach children to think is not lower than teaching them how to answer multiple choice questions on examinations. That is the major issue

that is before us. It is my hope that you involved in the critical thinking issues will continue to bring to your school boards and to the general public and the newspapers, not the notion that we ought to abandon standards or abandon the notion that schools can't always produce children who are happy at every moment, who love what they learn at every moment, but that the schools have a function of moving children from a warm family to a cruel outside world and this is a bridge in which there is sometimes pressure and compulsion that has to take place, that we are not going to abandon the obligations that we have, but that the way that we are being asked to do it is the wrong way and we have got to do that.

Now, there is another issue that touches on this and it is a very important one. It is one which I have introduced in a different context nationally, but I would like to take note of it here and I would like for you to take note of it. I have called and the AFT has called for a national examination for anyone who enters teaching in three parts. The first part would be an essay examination on subject matters and would really be involved in examining the ability of prospective teachers to think critically in their own field. That is why it is an essay and not the

$25 NTET quick, cheap examination. There is going to be nothing quick or nothing cheap about it because it is intended to see where the respective teachers are with respect to what they know about their subject.

The second day would be a full day of essays dealing with the knowledge base and research base and issues in educational policies, so that the teachers can talk intelligently to each other and to members of the general public in terms of their own field.

The third part of the examination would be a three-year internship which would be designed to answer the question of whether these people who are very good to answer a lot of questions on paper with pencil really know how to work with children and other adults. Those are the three parts.

The reason I am raising this is not as a commercial for a product that I am trying to sell, which I think is going to go, I mean I think it is going to work, but the fact that there is no point in talking about critical thinking if you have teachers who do not know what they are teaching. As a matter of fact, to be able to afford to have an awareness about critical thinking issues, you have to be so confident in what you are doing so that you are

able to move above it and think about different strategies and different ways of doing it. Otherwise, the teacher is just a few days ahead of the kids and is grappling with it and going home and doing the homework to make sure that he or she doesn't make any little mistakes.

You may think that is kind of a joke, but it isn't. The State of Florida started to give teachers examinations four or five years ago and 30 percent of the prospective elementary school teachers failed a sixth grade multiple choice arithmetic test. Sixth grade is kind of inflating it a little bit. These are very simple questions. They are the kind of warm-up questions many of us got, you know, no paper, no pencil, you walk in and the teacher throws the question at us just to warm you up. The answers were obvious. The three multiple choice answers that were wrong were obviously ridiculous and yet 30 percent of the teachers could not get a 65 percent on a sixth grade test.

Now, you have got to remember that once Florida instituted the test, those teachers who thought they were no good at math left the state to teach elsewhere. These were the good teachers who had confidence in themselves. We are in a sad state. We are in trouble.

There is no point in talking about critical thinking to somebody who does not know the language, someone who does not know their social studies, somebody who does not have enough confidence in their own field without a high standard of entry. We are just kidding ourselves. We will go out there and talk to a handful of people who are really knowledgeable and are good and everybody else will be lost to us.

There is another teacher organization in this country. They were against teacher exams until about a week ago. Now they said they are not in favor of a national exam, but they are in favor of state examinations providing that they are valid.

Well, I don't like state examinations for a simple reason. The passing score on a state examination is determined in a very simple way. The passing score is determined by the number of bodies that are needed in the classroom. Two years ago Louisiana adopted a teaching exam and they found they had a shortage and they decided to lower the passing mark. Lo and behold, they lowered it to exactly the point that would produce enough teachers to perform what? Critical thinking? No, custodial function.

We have to decide what education is about. Are we a custodial institution or are we about something else. Here we are at a national conference on critical thinking and until we are able to deal with that issue, we won't go beyond it. So, it is very important. It seems to me that a precondition for the development of critical thinking as a major objective in our schools is that we deal with the question of standards. It is extremely essential.

Now, I would like to move to a second issue which is a precondition because it is very easy to sit in groups and say how do you teach critical thinking skills and here is some elementary logic and here are ways of doing it in this subject and that subject. But I think a major contribution was made in the area of what we need to do in the area of critical thinking by Theodore Sizer in his book Horace's Compromise, and in the materials that have come out after that. There is also a chapter where he talks about coaching, but essentially, Sizer is really talking about what we are talking about. If you haven't read it, you should because Sizer says that unless you do some things to change what is now happening in schools, forget about critical thinking.

Here is what he says: How do you get students to think, or if you ask a student about something they will say well, my position is so and so. The minute you try to challenge the assumptions or the bias or anything else, immediately the student will say that is not what I meant or that is not what I said. So, if you want to get into a fruitful dialogue with the student and you want to shape up both the thought and expression and creativity, you have to say to the student, write it down. Put your thoughts in writing because when it is in writing, you will not say that is not what I said. There it is. Not that I am accusing you of lying, in your own mind you didn't say it. Put it in writing.

Writing isn't just writing. It is an organization of thought and the expression of ideas. It is not a purely formal skill, and so therefore if I am going to keep critical thinking and expression and imagination, here I am a secondary school teacher, I have 30 or 35 students in each class and I have five periods a day. I have between 150 and 175 students and let's say it only takes me three minutes to mark a paper. Not A, B, C or D, but mark it--raise questions, raise issues. Then, that doesn't do any good unless I have five minutes with each of

my students and I start asking some questions about assumptions or some questions about: Would you read this if you read that first sentence? You have a really good idea, it is very fascinating, but after you have read the first sentence, would you go any further? Look at these other people who have written short stories or essays. Read the first sentence. Have you got any ideas now about how you might do this over and have a different first sentence? Down here in the third paragraph, what is your evidence for that? Do you really expect people to believe you because you say it? All the things we talk about, you have to have five minutes--you may need more, but let us settle for five minutes.

What is five minutes for 30 or 35 students? Well, Sizer has some proposals. He wants to maybe put some English and social studies classes together so the teacher does not have 150, but 75 for two subjects. That isn't the only way of doing it. You can't say reduce class size in half because there are now two million teachers in America and we are talking about a major teacher shortage because we can't even find the one million we are about to need to replace. To cut class size in half is to say instead of two million teachers, we will have four million

teachers in America. Who is kidding who?

So, in a sense you have got to do it within current constraints, but if we don't think about how you can create a classrom in which a teacher can have a relationship with students, not purely on a group basis, but with the thoughts of those students as put on paper and as done and redone and as reformulated, forget about it. It will not happen. Sure, you teach a whole class and two or three kids will respond. They will go home and they will do extra work. They will get extra work there. They will get extra help there, but it will not happen on a massive basis unless the basic structure is changed in the schools in terms of conditions for teachers. It is a very important issue. There is no point in talking about the logic of everything we are doing if the conditions make it impossible.

I would therefore like at this point to move to still another issue which involves several things and that is that I hope very much that the critical thinking movement will not become a movement which says that critical thinking is something which has to be the key and the major thing and to do it in such a way that we are critical of other important educational functions. For instance, I find that there is no reason why one can't, and the main thing,

embrace critical thinking as one of the major aims of education for each of our students. One of the ultimate and major aims of education for each of our students. I find that I can do that without in any way saying that students should not have to memorize certain things. I think if students don't memorize certain things they will never get to the stage where they can exercise critical thinking. Now that is an earlier mistake. It is a mistake of many of the progressive educators who said you don't have to learn the alphabet, you don't have to learn the tables, you don't have to learn something else because these things are mere memorizations whereas what we want is for our students to think. They said you don't have to memorize anything because you can always look it up. Why waste all that time on memorization. Well, they were wrong.

One of the very interesting things which I find supplementary to what we are doing here and not contrary, is a whole series of studies which come in different directions in the field of reading and I think it is important that we spend a few minutes on this because, in a way, there is a parallel in the critical thinking movement to what has been the case in the reading movement.

For many years the controversy was how do you get more kids to read and to read well. You had two schools of thought. One school of thought was to get the kids to recognize whole words and phrases because that is how you get meaning and how you move quickly. There was the other school that said these people are destroying the children because they are not teaching phonics and they have to recognize. But, essentially, both of those two schools of thought seemed to be contradicting each other and, of course, they were offering very different roads, but they were both really saying that the only thing that counts in reading is a formal procedure to figure out words. If you find out a way to recognize words, you will know how to read. And the current theory shows that they were dead wrong.

Reading is not a formal skill. You cannot learn to read merely by learning phonics or merely by learning word recognition. Reading depends on a knowledge base. For instance, if you take a whole bunch of eighth grade readers and if you give one of them an eighth grade article that deals with baseball, but they don't know anything about baseball because he comes from a country where they don't play it, even though the person will be able to sound out the words, they won't know what the article is

about because every article about baseball assumes that you know how the game is played.

I can give you a little anecdote that appeared --this is a true story that appeared in the New York Times five weeks ago and it illustrates the point perfectly. The New York Times has a little section which is called Day-By-Day with little anecdotes. This was called Rude New Yorker. It is a little four or five sentence story. It said a woman got on a New York City bus and she asked the bus driver "Does this bus stop at 42nd Street"? He said "Lady, the sign in front of the bus says we go to 8th Street. She said "I know what the sign says, but I am from out of town. Does it stop at 42nd Street?" He said "Lady, even people from out of town know how to read."

Now, you see they were speaking very different languages. He was saying if you know I am going to 8th Street you must know if I am going to stop at 42nd Street or not. She is saying, I am from out of town, I don't know the map of the city. Sure I can read, but 8th Street doesn't mean anything to me unless I have knowledge of the way the streets are laid out. What we have found in reading, reading depends upon knowing a lot of things. If you just concentrate on what the kids have to know

if they are going to read, they have to know all the words.

For instance, if a student reads something, they read that so and so was tempted by the serpent or by the apple, or somebody refers to Adam and Eve or Noah's Ark or Daniel Boone. There are just thousands of things that any writer writing for a general audience feels it is perfectly reasonable to use. They use words like that to bring up memory and feelings and you can sound out the words, but if you don't know any of those things that an average writer feels perfectly free to use to lead you in certain ways, you are illiterate. You have got to have context. It is very important.

Now, why do I introduce that here? I introduce it here because I believe it is extremely important that critical thinking not be viewed as a purely formal skill just as reading at the eigth grade level doesn't enable you to necessarily read anything. I believe very strongly that critical thinking has to take place in social studies and has to take place in mathematics, and it has to take place within. It has to be an integral part of the curriculum and not something separate from it. If you will, just for a minute, step back and ask yourself those fields in which

you feel you are able to raise the right questions and to see all the issues, it will generally be those fields in which you know an awful lot and if there is some field where you don't know very much, you are not going to be able to do it. There is really no divorce between the context and the formal. There is a very strong interplay.

I would like to point out an example. There are really two examples in the history of education of what I would call extreme formalism, and that is trying to teach people something about ideas without the context. One of them is called the new math. Many of you have it inflicted on you. The idea was in the old days they didn't teach children why they were doing certain things. For instance, you just learned to divide and multiply and you carried numbers and you didn't know why you were carrying them. You crossed something out or you dropped a number or you did this and none of that made any sense.

Along came these people who said if only we can get these kids not to do these things in such a way that it doesn't make any sense. If we can only get them to understand that this is a decimal system and that there is an associative law and distributive law and if we get them to understand all these things, then arithmetic will make sense and we lose a whole generation in arithmetic

because it is much more difficult to learn why you are doing something than to do it. If you require children to learn all about their muscles and blood vessels before they learn to swim or walk or ride bicycles, they would never walk or swim. There are things you are able to do. If you want to, you understand it later. You are a better human being if you understand it later.

You have the same thing in the way languages are taught. I went to school at the time when we were asked to study grammar and asked to diagram and part sentences. There is now conclusive research that shows that all those students who learned to diagram sentences are better at diagraming sentences than all those who have not learned how to do it. (Laughter.) But there is absolutely no evidence that you learn the language better or you learn another language better if you do it.

Let us beware of an approach in critical thinking in which we end up with a certain number of specialists who know how to talk about critical thinking, but where the course you take in critical thinking and the language you develop in talking about critical thinking has nothing to do with what you do in English or mathematics or social studies or what you do in any other field because

it is not true that learning something like this in the abstract automatically transfers and enables you to use it in any particular field.

My next point, I have already mentioned. I am very concerned and bothered that critical thinking is not on the real agenda of education reform. That is, all the reports talk about critical thinking, but then they end up giving multiple choice, simple, idiotic tests. I don't care what they say in the literature, it is what they do that counts, and it is what they do that forces the teachers to teach in a certain way, get the text books written in a certain way. The whole thing is not carried out in terms of the report says let us have critical thinking as an objective, but the real objective is getting a higher mark on the test this year than last year. A higher mark has nothing to do with critical thinking, it is a way of figuring out how to take the multiple choice examination. I am just as worried, and I wish that there were a conference like this or maybe you would want to merge, but I think the whole question of imagination is as important as critical thinking.

You know, most scientific discovery does not occur through thinking. There is a lot of thought and

knowledge of subject matter, but when you get any major contribution to knowledge, somebody takes a leap, somebody has imaginzation, somebody has an artistic sense, somebody gets to something which you cannot get to in a linear way or in a dialectic way, or in any other reasoning way. It is a jump of some sort. The interesting thing in our society is we only talk about imagination in art or music or literature. There would be no science without imagination.

The theory of relativity is not something somebody worked at through ordinary thinking or through gravity or any other major understanding in the world of science. These are broad visions that people developed to explain the world. They are every bit as much imagination that a great symphony is or great painting or a great work of literature. Of course, eventually you test them and there is critical thinking involved in saying does this provide an accurate basis for understanding the world. So, there is a relationship. But the creation of these is the creation and work of the imagination.

In a way, the funniest and the most tragic picture in all schools is a science teacher standing in front of the kids saying, "Now repeat after me. Air has weight" as if science were something that is memorized

instead of a process of critical thinking and creative imagination. It seems to me that critical thinking as an emphasis has to balance with a creative imagination which in many cases is being pushed out of the curriculum because it is being viewed as a frill. Music and art won't help us pass the multiple choice test, so throw those things out. It would be a horrible thing if they were.

These are my thoughts on the issue. You may like some. You may not like some. I am very concerned that critical thinking not become a passing fad. The new subject to be introduced X years ago was dirvers education, then sex education. This year it is critical thinking, next year it is something else. It will be a fad unless it is thoroughly integrated. What we have to do is say you haven't done your job as a social studies teacher unless you can ask your students the following question and get a pretty good answer and then put out a series of questions which will show what is the aim of taking a course in social studies. What type of person, what type of abilities are you trying to develop?

Throw out questions that involve both imagination and critical thinking and interpretation. How many of our students can do that? How many teachers can

do it? I think that the important thing is to throw out questions like this to say to the teachers of English and math and social studies and every other field: The kind of student we are aiming to get is a student who can do the following: Who can answer questions like this; who can create things like this; and we will then know if the students can, that critical thinking is not just one week and this week we teach critical thinking or that semester you take the course in critical thinking or when we reach a certain stumbling block the teacher pulls out critical thinking as a way of talking about some problem. The goal is so interwoven in the fabric of everything that we do, that it happens minute by minute and hour by hour, then we will not have an add-on or something which is a fad which will disappear, but something which will live foverever.

Thank you for your patience and I will be happy to respond to your questions.

(Applause.)

THE MODERATOR: If you will pass your questions down, I will read them into the mike because we want to have the questions on tape and we won't pick them up unless they go into the mike. Perhaps, for a starter,

I could ask a question for clarification.

Al, do you see any need to merge the concept of critical and creative thinking so that they are not set as it were in opposition to each other as sometimes is done?

MR. SHANKER: Yes, they are very different. They are not the same thing, but they can't live without each other as they are clearly symbiotic and complimentary. I think it would be very important not to say that they are the same thing. They are not. One is sort of a flight and a leap and a jump, but it is not undisciplined and it is not without thought and any old leap and any old flight and any old jump can just be insanity. There is a difference between the creativity which moves back to critical thinking and which ultimately gets tested and tried, but I think the notion of putting them together as the basis for the highest form of human expression in the life of the mind is very important.

Not as opposites, you are right, but not as identical either.

THE MODERATOR: With strong entry requirements for the teaching profession, how do we encourage the best of the people to go into such a low paying job?

MR. SHANKER: Well, it is chicken and egg. Let me say that--I am going to be very tough because you

are critical thinkers, so I am going to give you something to take back.

There are two million teachers in this country. If you were to raise salaries by 50 percent, last year teachers on the average earned $22,000, so if you raised it to $33,000, that is very modest because $33,000 does not get you very far in our society, but after all, 50 percent is a lot. So, let us talk about a 50 percent increase in salaries. Let's see how much that would be. Two million teachers, $11 million in increases--that is $22 billion dollars. When you take the social security and pension and other related costs that is $30 billion.

Now, let us say in addition to that we also have to reduce pupil-teacher ratio so that we can do something about reaching students and we will be very modest about that. We are only going to reduce that by 20 percent. The third thing we are going to do, and I meant to mention that in my talk, is that a lot of critical thinking agenda has to take place by allowing more time for teachers to be able to see what other teachers do, to be able to talk to each other; not to be locked in a room with children for their entire lives, but to have a set of peer relationships. That drives people away. To be locked in a room with kids for the rest of your life

without being recognized by other adults certainly does. No question about it.

So, you will also take one out of the five periods of a day or say the secondary school and give that, so you get a 20 percent reduction of pupil-teacher ratio and a 20 percent reduction in time. The cost of that is $100 hundred billion. At a time when the nation is about to go down because of a $200 billion deficit, it is not very likely, so the only way we are going to be able to bring about these changes is to do some very radical transformations in public education and how it is delivered. It may be that we shouldn't have two million teachers in this country who are doing exactly the same thing. Maybe we need 250 or 300 thousand career teachers who are earning $65,000 or $70,000 a year and who are cracker jacks at everything we are talking about. It may be that if you want to get teachers to teach critical thinking, stop them from standing in front of the room regurgitating facts. How can you stop them from doing that? Well, video tapes are a lot better at getting information than teachers are.

If you want to show kids how people live in Alaska or how they live in Australia or what happens to a certain animal or a certain cell, a video tape is a lot better at giving information than teachers can.

Better. You see it. You watch it. You hear it. You hear music. Anybody who knows anything about learning knows if you get hit three ways it is a lot better than just listening to words. So, if we gave teachers in a sense, no choice, some of this is going to be done technologically. I would say the third aspect of it is to have a lot of teachers who are transient, who are outstanding people who don't want to spend the rest of their life in teaching. But if you say, this is like the Peace Corps. we will pick the best and the brightest. We are going to give you training, you will teach for five years. You will wipe out your college loans, we pay for your graduate education, teach for five years and you have, in a sense, permanent teachers and transient teachers and technology and the permanent teachers are paid $60-70,000 a year and they are the caliber of people that you can do it.

But there is no way in this next period of shortage, and it is not just a shortage of teachers, but it is a shortage of all college talented graduate people. There is no way that you can get two million of the kinds of people that we are talking about because there is no way in which you can get people, the money and so forth.

So, you either abandon the goals or you think--now this may not be the only way of doing it. Maybe you will find some other creative way of putting education together and making it work. If you do, please write to me. I would like to see them and I am sure that there are other ways. One thing I am sure of is that just talking about raising salaries, reducing class size, reducing teacher load and 20 years from now we are going to face the same problems that we have today. We will have incompetent teachers, class sizes that are too big, no time to talk to each other and critical thinking and creative expression will be absolutely out the window because you will not be able to do it with the teachers that we have and the conditions that we have.

THE MODERATOR: I think this can be probably answered fairly quickly and it addresses a previous response.

Could you entertain the idea that critical thinking is involved in creative production in the arts?

MR. SHANKER: Sure, but as I said, you don't have to say that the two things are exactly the same to know that they work with each other. I think it would be very important to read books about Einstein, about Thomas Edison, about a hundred different people who obviously

were involved in critical thinking and who were also involved in creation and I think it would be very interesting to see what the relationship was between them. They are very close, but they are not the same. You can get a lot of people who move away from critical thinking and who develop a lot of interesting visions and those visions may not go very far or somebody else may have to move them.

On the other hand, you may get people who are terrific at dissection and analysis. Just read accounts by students of Morris Rayford Cohen, one of the outstanding philosophy teachers of City University. Literally hundreds of his former students became important philosophers, but it was mainly a kind of pounding away which, if you were a weak student, he destroyed you and embarrassed you. If you were strong, you became terrific at logic and at thinking, but Cohen did not have the creativity--he had great critical thinking skills and great skills as a Socratic in the classroom, but he did not build a system that John Dewey built or that Whitehead built or that others did. There was no vision of the world that he left for others to see, so I can't stand here on one or two feet and describe the relationship between the two. I don't know that anybody else has done it exceptionally well,

but it ought to be a part of our agenda to take a look at the relationship between the two.

THE MODERATOR: Another question here. It appears that critical thinking has been fed into the commercial mill and schools are now facing a deluge of critical thinking, fixed programs which are sold on the basis that they will help raise test scores and increase I.Q.'s, etc. What can schools do to screen such programs and insure that what students learn is actually critical thinking and not a gimmick?

MR. SHANKER: Well, the question answers itself, doesn't it? Just tell people what these commercial things are and tell them how phony a lot of these claims are and it seems to me that we have to have a very solid notion that critical thinking is a very close merge between pressing beyond facts and the usual substance to ways of not only looking at it and analyzing it, but to an integral part of each. I think you will be able to show that most of these things are very soft and kind of silly. They are shallow. But you have to have an unshallow notion of critical thinking to fight a shallow one. You can't fight one shallow one with another shallow one.

We ought to tell people we don't have a quick fix, that this is very difficult, that creating real human beings with the power we are talking about, if anybody could just push a button, give somebody a couple of lessons or exercises, it just won't work. I think it is important that we sell these things as very worthwhile, but very difficult, and things like that take time. It takes a lifetime.

It doesn't stop with schools, obviously. What we are trying to do is to create a type of person who continues learning. That is what we are really talking about. To think that school stops, education stops, now I have got it--that is what we are fighting. A lot of the programs create the impression that is all you need and then we are finished. We have got an education population. I think that we will have no trouble in showing them that a quick fix won't work.

THE MODERATOR: How can we move to excellence in education with such timid administrators who seem never to stand for anything except what does the superintendent or board want or state regulations?

MR. SHANKER: That is certainly a very good question. It talks about institutional changes that we

need. We are all finished unless the institution changes basically.

The whole institution changes basically, and that means that unless teaching becomes really a profession, and that is that teachers are viewed as the key people and nobody stands over a surgeon and tells him to cut a little to the left and a little to the right. The surgeon is the expert. The hospital administrator makes sure that the hospital is there and to make sure that the nurses are there and the beds are there and so forth. Until the teacher is viewed as a key person, and by the way, the teacher is only going to be viewed as a key person if the teacher is an expert and a competent person, not just because a person is a teacher. We don't respect surgeons and allow them to make decisions because they are called surgeons. We know that because someone is licensed as a surgeon, they probably know their stuff and we have got to have the same thing with teachers.

Now, I think that a lot of administrators are what they are because of the pressures that are on them. What would the chief executive officer of any corporation be like if he had to meet in a public meeting with his board of directors every two weeks and each member of the

board of directors is elected on his or her own, that his is not a party designation. The way you get to be known is that the more outrageous things you say, that the press picks up, the more your name gets to be known.

If you are a chief executive officer who meets at such a public meeting every two weeks, you have to be paralyzed. You have to worry who is going to ask what and what you are engaged in is defensive educational administration. If you are just engaged in defending yourself rather than promoting it and then you turn around to the principal and say keep things quiet and don't let any bad stories get out and then the principal turns around and if you have good ideas and they are saying: Right now things are pretty quiet. Who knows what that good idea will bring. Don't do it. So, you have got a whole series of pressures.

I think one of the key ideas may be that maybe you should only have boards of education meet once a year. (Laughter.)

The board of directors of every major corporation meets once a year. (Laughter and applause.) If the chief executive officers do something outrageously wrong, the board challenges. Otherwise, they say go ahead.

That is what they decide, a very general direction. So, that is an important issue.

Secondly, you may in many cases want something like what happens at the college level. You may want the head of the school to be elected for a term of office by the teachers, not to service their supervisor, but to receive information to help the structure of the institution so that the teachers can work more effectively. We have got to look at other models. Models we have now, no self-respecting intelligent person is going to remain in the current situation very long, and I think if you start with that, if you had asked my parents why do you work?, they would have said "Do you want to eat?" "Do you want a roof over your head?"

Today, if you go out and ask people why do they work for a living, they don't answer like that. Of course they want to eat. They say I like my job. I am able to exercise judgments. I have certain abilities I was never able to use before, but in this job I am a good salesman or I write or I do this and they let me do it my way and because I do it my way, I do a better job than the others do it. You know that, they know it and they recognize it. Now, what you have now is that more

and more educated workers are treated differently in the workplace and what you have in teaching is that you have the old-fashioned factory system where somebody looks at you and checks you off and evaluates you and observes you, and tries to reward you and punish you. The notion is that you are stupid and lazy and unless somebody is on your back all the time and watching you, and telling you what to do, you are going to do the wrong thing. Actually, if you hire people for $13,000 a year you better watch them closely--I would. (Laughter and applause.)

THE MODERATOR: I thought you said the personal interaction needed for critical thinking instruction cannot occur without major changes in the structure of education. If so, what changes do you think are needed?

MR. SHANKER: In a few of them I suggested a change of how you take professionals in terms of the quality. I suggested the Sizer approach where you provide individualized time between teacher and student precisely on coaching and critical thinking. Those are two of them. I am sure as we think about redesigning schools, we will think of some other ways of doing that. But, as long as you have merely large classroom instruction and 175

papers to mark, and each teacher who comes in who themselves are not able to deal with their own fields, let alone to grapple with what are the different ways of approaching it and what are some of the assumptions. Unless you deal with those basic structural issues, I will give you a third possibility of something to look at.

Schools are now structured on an annual basis, most of them, some of them every half year. That is, a kid comes in August or September and you get promoted or move on usually the following June, in some cases half-way through.

Let us think about what the impact of that is on education and in turn on the effort to really get to the heart of the subject all the way to the critical level. And you went through in September. Do you really think missing a few lessons in September and October is going to have much of an effect the following June? How many people believe that something they are willing to sacrafice a little bit of pleasure now for an outcome that is almost a year away. How many teachers believe that every hour or every period is critical if this is September or October and they have a whole year ahead of them?

What happens when a student does not do some of the work in September and October and in November finds himself absolutely and hopelessly lost. The rational thing for him to do is drop out because there is no way he can catch up. Once he drops out, what do you do with him next September? Does he come back? What do you do with a student who, at the end of the year, has really not made it? Do you promote him even though he has not made it? Do you leave him back and eventually you get the father in the same class with the son. (Laughter.) That's not very good. What do you do?

Suppose we didn't organize semesters on the basis--by the way, at the end of the year when the kid has flunked, do you really know when he really kind of dropped out in his own head? Or do you really know what you did that was wrong that you didn't reach him? A whole year has gone by. Do you really know with each of your students? Suppose you had semesters four weeks long? And suppose that every student knew that two weeks from now is the mid-term and four weeks from now is the final? Would you think that every day counts? You sure would.

If you were the teacher at the end of two weeks would you have some notion of where you had lost

the kids and where you hadn't every week and every two weeks? You would. Would you think that every period counts because you have only four weeks to go? You sure would.

What if the kid failed the four weeks, then he doesn't have to repeat the whole year, does he? He only has to repeat the four weeks.

What if something horrible happened and a kid dropped out? Well, he can drop back in again every four weeks because it is not organized on an annual basis. You know, one of the major problems schools have is when kids enter school in the first grade. You have to pick a cut-off point. What has to be your age when you enter the first grade and every school system picks a certain date, birthday and if your birthday is after that point you come in and you know what that means. That means that you have got kids in first grade who are one whole year apart. Do you know what one whole year means in the first grade in terms of maturity and ability to do something? Do you know what the kids who are the youngest in there do as compared to the oldest? Do you know how many of those youngest end up being failures because they can't compete with somebody who is so much older than them and

and they feel they can't.

They get to feel that they are stupid and they can't do it and so forth. Do you know what an intake process it would be where you could take kids insensitively every four weeks? Why don't we do it? A lot of paperwork, that's why.

Wouldn't something like that which enables both teachers and students to focus more carefully at individual subconcepts and issues and so forth, would that enable us--I don't know if it is the answer, but is it worth thinking about? Sure it is worth thinking about.

Is it worth trying somewhere? It might not work. We are in real trouble. We may not have public schools in this country ten or fifteen years from now unless we shape up. By shaping up I don't mean a new tail fin or a new set of commercials. We have to be just as scared as American automobile manufacturers today. They have one chance to retool their whole industry. It costs a billion dollars to retool it. If they make it, we will have an industry, if they don't make it, we are finished. We will not have an industry. We have one chance now. The public is very angry at us. They are willing to give us one more chance. We have to think of radical changes and the crazy thing, all we are talking about is the same

stupid multiple choice examinations that have been around for fifty years. That is the big reform we are imposing upon people instead of sitting around and thinking how can we change the entire guts of this institution so that we can teach and the kids can learn.

All those things thrown out are ideas. I don't know if they will work, but if you are in trouble, you start thinking about totally new ways of doing things and you test them. I wouldn't inflict any of these ideas on all of our schools, but I would like to see twenty schools try them. (Applause.)

THE MODERATOR: What are some of the things that the AFT is doing to promote critical thinking instruction and how important a part do you think it will be in AFT's agenda in the future?

MR. SHANKER: Well, I am engaged in critical thinking. Seriously, we do have a program. Debbie Walsh is here who heads that project. We will have a session right after this one. We also have some written materials for everybody here and it is a program that is in the process of development. It will be a very important program and a major one. We have one now which deals with major issues that teachers feel concern them, such as classroom management.

Then, we have come to the academy and said what does research tell you about this. We have translated that research and then we have gone out and trained teacher leaders to be able to disseminate it. We will be going through a similar process of developing a critical thinking program. As you know, you were at the QuEST Conference and we had a number of other people who are in this field and we also had a press conference there in which we announced the launching of the program. We will have materials here on it. You can see from what I have said, what the aims of education are, how the tests that are in now are bound to be disappointing, that this is a major issue with us.

THE MODERATOR: Formal logical skills can be taught cheaply to large classes and can be tested cheaply and they contribute something to clear thinking. Imagination can't be tested easily. Shouldn't we teach what we can? Please comment.

MR. SHANKER: I don't think that everything that is tested has to be tested on the same sort of basis of measure. For example, it is a lot easier to have a multiple choice test or a spelling test than it is to have an essay on something. You know, you can mark essays

even though they are creative. As a matter of fact, one way of doing this is to teach a whole bunch of graders and if three people mark it and they all come within a very close margin, you know they have all seen the same thing and judged it pretty much the same way. It is much more important to get people to do the latter than it is to do the former.

I am not of the school that everything that is measurable with a thermometer is the only thing that is measurable. There are an awful lot of things that teachers know--by the way, there are an awful lot of things that doctors know for which, I don't know that any doctor today could explain to you everything that is an effect of aspirin, but some years ago they found out that if you had certain problems, you took that and it didn't seem to hurt everybody. As in every professional field, you get to learn something on the basis of practice. Not everything is profitable. Not everything is numerically measurable. But I could certainly know when somebody has given me a convincing argument and defended himself or smashed someone else's argument, or has given some good reasons for abandoning one point of view and shifting to a slightly different one.

I don't know if I can measure that by a little test or not and, by the way, I think most of the American

public would be happy to abandon all the cheap tests if we had all the students coming out being able to do the kinds of things I am talking about. They will say, hey, that kid can argue with me, can raise questions about what I am saying, can deal with everybody. That's an educated kid. Whereas you can send a kid home who has gotten very good scores on these dummy tests and say he doesn't know a damn thing. He can't write, he can't argue, he can't read anything. We are not kidding anybody.

I am not worried about the measurability question. I think if you produce direct evidence to the American public, that you have got a person who is a thinking, imaginative, educated person, they will know it. They are only going to test because they are trying to say you guys have not done a good job, so we want to push you to prove that you have done a little bit more and that pushing and pressure is getting us to do the wrong things, unfortunately.

THE MODERATOR: Here is a question about the new math failure and a similar question I think might be raised with respect to some of the other reform movement, such as Dewey's ideas.

The questioner argues that it wasn't the concept, but the way the concept was introduced. The

teachers themselves did not use critical thinking skills to help the students learn the math. So, not the new math, but the way it was introduced, or not Dewey's ideas, but the way they were characterized.

What is your response to that kind of thinking?

MR. SHANKER: Well, with Dewey, it was a misinterpretation. Dewey ended up refuting a lot of the implications, so I won't get into that. I disagree strongly on the question of the new math. There may have been additional problems created by how it was applied, but the notion that the first, second, third, fourth and fifth grade children can, in addition to learning certain operations, also get an understanding of the basic form of algebra, or symbolic logic that you are going to add to the curriculum, I think that there is very ample evidence that we are introducing something that was too much, too early, unless--look, little kids like to memorize a lot of things. Let us not be antimemory because we are in favor of critical thinking. After all, you can't cticially think about everything, important problems in your own life.

You think about important social issues. You think about important issues in your profession, but the reason we are able to think is that we do most things habitually and we do it through habit and memory and you use your critical thinking skills in those places where you want to develop into habits and new ways of doing things and not in everything. Therefore, I think the creation of habits through memory and through various forms--and children remember like that very much. You can't leave everything open to thought at all times. Not everything can be in jeopardy. It is not to say that critical thinking is bad. It is most important.

Critical thinking is based on a foundation of things that are uncritical.

THE MODERATOR: Let me respond to that for a moment with some clarification. Critical thinking encompasses different things, including some things that I think are very uncritical. A lot depends upon your concept of critical thinking. Some consider it negative thinking or faultfinding, nitpicking and so forth.

I think memory, in a way, covers some such mixed bag. Would you want to distinguish rote memory from some other means of study which promotes learning and

therefore memory, but are not rote, or are you arguing for rote memory pure and simple?

MR. SHANKER: I would argue for a certain amount of rote memory, yes. Absolutely. (Applause.) I think you take a young kid and you do what was done in the old days and you get a couple of flash cards and you say Johnny, today you are going to learn your multiplication tables, and there is no fun about it and you are not going to understand it. You will learn a couple of hours and then, later on, at some point, you will understand it.

But I will tell you, you take two different schools, one where they are trying to get the kids to understand what they are doing and the other one that says this you are going to do. It is a requirement and you do it and there is absolutely no question as to who comes out ahead. There is a role for rote memory at a certain time and there is nothing wrong with it and it does not replace. It becomes a foundation later on for something else. I think where we go wrong on many of these movements is to decide if you recognize that there is any other form of learning or developing habits or developing a basis, that there is only one way.

There isn't only one way. Critical thinking

is not the only way that the people learn. Most of the things we learned in life we learned through habit. We learned through all sorts of other ways. We need critical thinking because these habits break down, because they are not always rational, they are not always good, because we meet other people with different habits, because we have to have a way of dealing with that. But you know something, if every morning I go to the train and I don't bother to look where I am because I have been doing this every day for the last 40 years and without looking I just go the left and set on it and open my newspaper and read it, and if it it gets me there every day, I don't want to think about it. I don't want to read anything. I just want to be left alone.

The first day I do that and it lands me in a different city, then I am going to be engaged in thinking. (Laughter.)

THE MODERATOR: Of course, some say narrows are not reversible.

Will unions begin to explore/address issues related to instructional concerns more than working relations with administrative boards? Is this a new trend or already existing?

MR. SHANKER: I think it is really a new trend although teacher organizations may deny it. We are not abandoning collective bargaining. It is very important that teachers hold on to the gains that they have made and advance in terms of salaries and working conditions. There are things that are not subject to collective bargaining. There are things that deal with professional issues. Those have to be dealt with frequently in a totally different forum and those are very important both in terms of the future of education, the future of public support, our ability to get a high caliber of people to come into the field in the future, and one of the things that I advocated at the QuEST Conference, this way was a way to get around for the traditional merit pay issue.

I called for the creation of a system of board certified teachers and I did it on the model of-- no, back in the 1930's if you had a problem with your eye you went to a doctor. There were no board certified specialists in the early thirties. Every doctor was a general practitioner and every doctor could claim that he was a specialist and the people who were really specialists got to be very indignant. They said, hey, a lot of people go to that fellow there and he knows how to treat a simple

eye sore, but if somebody has glaucoma that person is going to go blind because they don't know what to do about it. They went to state legislatures and they tried to say that specialists ought to be state licensed and all the doctors went up and killed that legislation. They didn't want anybody limiting what they could do.

So then, these specialists got together and said all right, if we can't prevent all doctors from practicing even in fields that they are not qualified to practice in, we will create a certain number of national boards--19, one for dermatology, one for anesthesia, etc., opthamology, and we will certify and publicize for the world that these are board certified specialists.

Board certification is not just a written examination or a certain number of courses. It is working with your colleagues and being recognized by your colleagues as having reached a certain point of expertise. Now why shouldn't we have national math teachers associations and the American Mathematics Association get together and creating a series of standards which would create board certified mathematic teachers, essentially say every other teacher is qualified, but here is somebody recognized as being super and why shouldn't unions negotiate different

salaries for people who have gone through all the trouble. Like in merit pay, if I go from Los Angeles to San Francisco, in Los Angeles I am a board certified teacher, I will still be board certified. I am not competing with the person next door. So, if she asks me to help her, because the worse she looks the better off I am as a merit teacher, but if we are both going to some national board, I don't care if she looks good too because we are not competing with each other.

The decision is not made by the principal or the school superintendent. Good school districts will say to the public, 75 percent of our public school teachers are board certified teachers and the others are on their way to board certification. I would like to go a step further and say that I would hope that the very same national boards, that one of the boards which is certifying teachers would say that these people are masters at developing critical thinking within their own subjects. That would be one of the things that would be looked at, not just that you are answering some simple examinations, but that you might have a class of teachers who are nationally certified as having abilities in the area which are exceptionally outstanding.

I think unless the American public starts looking upon us not just as people who are around for the annual pay increase and who are constantly looking to take something, but as people who are very much concerned about our subjects and our students and with critical thinking, unless we are viewed as being in the vanguard, not just through public relations--when I said a few months ago I gave a press conference in Washington that made more headlines across the country than anything the teachers have done before. I said if there is a national teachers' exam, the AFT, three years after the exam is in place, will agree not to accept into membership any person who becomes a teacher without having passed the examination. Now, that was shocking to the general public that a teachers' union would deprive itself of dues and membership on an issue of quality.

I think we need to do more of that because I think we need to reestablish that credibility with the public.

THE MODERATOR. I think that is an excellent idea with which to close this exciting session.

Thank you very much.